A

NEW AND COMPENDIOUS TREATISE

OF

ANATOMY,

AND

PROPORTIONS OF THE HUMAN FIGURE,

ADAPTED TO THE ARTS OF

Painting, Deſigning, and Sculpture.

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Deſigning, Painting, and Sculpture,

ILLUSTRATED WITH

COPPER-PLATES.

DESIGNED PRINCIPALLY FOR THE INFORMATION OF SUCH

LADIES

AS PRACTISE THE ABOVE ARTS;

And abſolutely neceſſary to all Students, who wiſh to acquire Correctneſs in the Outline of the HUMAN FIGURE.

Yet let not your untutor'd childhood ſtrive
Of Nature's living charms the ſketch to give,
'Till ſkill'd her ſeparate features to deſign,
You know each muſcle's ſite and how they join. DU FRESNOY.

By W. F. WELLS.

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G.R
III.

INTRODUCTION.

WHEN we conſider the aſtoniſhing progreſs which the polite arts have made in this country within the period of theſe laſt twenty years, and the rapidity with which they ſtill preſs forward towards perfection, it is a matter of no ſmall ſurprize, that the great and leading principles of Anatomy, which is univerſally conſidered as one of the moſt important and neceſſary branches of the ſcience, have been ſo long withheld from the female ſtudent. In order to ſupply this deficiency I have ventured to offer this ſmall compilation to the attention of the public, where nothing but ſimple theoretical arrangement is attempted; but which, nevertheleſs, may ſerve to prepare the general reader for a more intimate acquaintance with thoſe authors, who have enlarged upon this ſubject in a full and copious manner; who have entered into all its minutiæ, and inveſtigated all its ſubtleties. Yet, though this little publication profeſſes only to treat of the firſt rudiments, I cannot but flatter myſelf without aſſuming any arrogant pretenſions, that the information it contains, aſſiſted by the ſtudy of anatomical plaſter-caſts (which cannot be too earneſtly recommended) may in ſome degree tend to remove that want of energy and truth, that feebleneſs of effort and inconſiſtency of character, which is but too obſervable in the deſigns of our female amateurs. That there are many ladies, whoſe proficiency in drawing riſes far above the ſtandard of mediocrity, is a fact that no one will attempt to deny; and without any diſtruſt or heſitation we may venture to

affirm, that a much greater number of them would attain to a very ſuperior degree of excellence, if the door of information in one of the moſt eſſential requiſites of the art was not ſhut againſt them.

But whatever aſſiſtance the ſtudent may derive from an attention to this ſcience, there is yet another taſk to be conquered, which, though conſidered as merely rudimental, is notwithſtanding of equal importance, and which appears to have been in general too little regarded; though the neglect of it cannot be attributed to the ſame cauſe which has tended to impede the advancement of Anatomical knowledge. What I allude to, is the ſtudy of Proportions, which certainly ought to claim the earlieſt and moſt ſerious attention of every one who is ambitious of obtaining the palm of ſuperiority in the art of painting. I am well aware, that at firſt the dryneſs and inſipidity of the ſubject frequently checks the zeal of young practitioners; but it ſhould be remembered, that though for a time they may toil without the conſciouſneſs of progreſſion, they will not at laſt be left ungratified or unrewarded. When once the firſt principles are deeply impreſſed upon their minds, they will find themſelves poſſeſſed of a certain degree of knowledge and judgment both in deſigning and executing, which will greatly exceed their hopes and expectations. To convey this uſeful information it has been thought proper to annex a brief compendium of the proportions of the human figure, which is compiled from the beſt authorities, and practically elucidated by two plates of proportions. In this, as in all other ſciences, the firſt principles ſhould be defined with the utmoſt poſſible perſpicuity; otherwiſe the ſtudent wanders in a labyrinth without a clue—his ideas are diſtracted, and his attention is drawn from the direct path which ſhould lead him to perfection.

In order to convince thoſe who may doubt of the advantages which ariſe to a painter from a certain degree of Anatomical erudition, it may be neceſſary to obſerve, that without knowing the properties of the muſcles,

no one can tell which particular muſcles ought to appear ſwelled, and which attenuated, as that is ſolely dependent upon their office and their actions; to confirm which we have only to conſider the nature of muſcles and muſcular motion. " A muſcle is compoſed of a very great number of fleſhy fibres, like threads, which run parallel to each other, and are wrapt up and kept together by one common membrane or ſkin; its middle is fleſhy, and its origin and inſertion generally tendinous, and this laſt being fixed to a bone, draws it towards the place of the origin of the muſcle. When the muſcles act, they contract in length, and appear to ſwell in thickneſs and breadth; ſo that in every attitude thoſe muſcles will ſeem moſt ſwelled, and their ſeparation from the neighbouring muſcles appear ſtrongeſt, that act in bringing the body to that attitude and continuing its motion, while the other muſcles will appear comparatively flat." Hence it is obvious, that unleſs the ſtudent poſſeſſes a thorough knowledge of the form, diſpoſition, and offices of the ſuperficial muſcles, with their immediate proximity to the bones on which they act, and a perfect acquaintance even with the bones themſelves, he can never hope to attain to any degree of perfection or correctneſs in the outline of the human figure. Thoſe who wiſh to draw merely for their amuſement, and who never extend their ideas beyond the deſign which is placed before them; or if ever they indulge in compoſition or copying from nature, have no deſire of producing more than what is commonly called a *pleaſing* drawing, may object to Anatomy as a dry, uſeleſs, and intricate ſtudy. They may poſſibly excuſe themſelves from attending to it by pleading, that as the drapery in general covers a great part of the figure, the advantages accruing to them from the ſtudy of it will be of very little conſequence. Let ſuch as wiſh to conſole themſelves with this argument be aſſured, that from whatever model their figures may be drawn, clothing in their firſt ſketch ſhould be but little conſidered, as it may only tend to lead them into incorrectneſs: whereas on the contrary, if the figures are firſt ſketched in a ſtate of nature, the drapery will flow gracefully over them; the elegant form of the limbs will be delicately diſcloſed by the light

folds which ſurround them; the contour of the figure will never be loſt in cumbrous decorations; and that ſweet ſimplicity which is the diſtinguiſhing characteriſtic of the ancients, will be the ſure reſult of a practice founded on the ſame principles by which they arrived at that excellence, which has ſo juſtly rendered them the models of imitation to ſucceeding ages.

The neceſſity of ſymmetry in the human figure is an idea ſo univerſally acknowledged, that little need be ſaid in recommendation of it. Without a knowledge of proportions all would be involved in doubt and perplexity: on the contrary, with how much greater eaſe does the ſtudent execute his ideas, whoſe ſtudies have been regulated by a well-digeſted ſyſtem: his perceptions are clear, deciſive, and unembarraſſed, and ſo far from finding that laborious difficulty which muſt naturally reſult from the vague and uncertain efforts of an undiſciplined mind, he performs the taſk of execution with all the careleſs eaſe of mechanical certainty.

It will be readily allowed, that every thing ſhould be properly conceived before it is attempted to be expreſſed; conſequently, unleſs the component parts are well underſtood, a clear conception of the whole is utterly impoſſible.

Without due care the mind will frequently be apt to fall into the error of confounding the Pleaſing with the Beautiful, whereas in fact they ſuggeſt two clear and diſtinct ideas:—The *former* is capricious and wavering; it can be aſcertained by no rules, and differs probably according to the aſſociation of ideas in different minds. The admiration and intereſt which particular countenances excite in particular perſons, may often be deduced from the ſympathetic affections; and the decided preference which we give to ſome features over others, ſometimes proceeds from an idea that thoſe features are the exact indication of certain traits of character. But the *latter* is fixed and invariable, and ariſes from the contemplation of a form poſ-

ſeſſed of perfect ſymmetry, where the graceful flowing line of beauty is diffuſed through every limb and feature. This line muſt ever be conſidered as a conſtituent part of beauty, ſince without a combination of it no form can ſtrictly be called beautiful. Other lines produce different effects—ſuch, for inſtance, are the ſtrait lines which proceed from thin ſhapes, the round lines which accompany corpulency, &c. but that only which we have before mentioned is the line which is uniformly attached to every beautiful object. Such, indeed, are our propenſities, our attachments, and our prejudices, that unleſs we candidly ſubmit to the arbitration of ſome rules, we ſhall continually permit our judgments to be biaſſed by our paſſions and inclinations; and the idea of beauty will be as fluctuating and uncertain as caprice and faſhion can make it. This obſervation proves the neceſſity of adhering to certain proportions; and ſince thoſe here given have ſtood the teſt of ages, we cannot do better than to make them our guides in the regulation of our ſtudies, and form our judgments by this ſtandard; eſpecially, as every material deviation from them, when ſtrictly conſidered, muſt appear as tending rather to deformity than beauty.

But independent of theſe rules and proportions, (which, are in fact, only to be conſidered as the firſt ſteps towards correctneſs of drawing) the ſtudent has ſtill another taſk, which no rules can teach, and which good ſenſe and obſervation only can ſupply him with the means of acquiring.—What I mean is *Grace*. A certain degree of Grace muſt conſtantly be attached to every part of the art, without which the mind can never be thoroughly ſatisfied, however it may be delighted with correctneſs of outline, energy of expreſſion, and a proper diſtribution of objects. Some, indeed, inſiſt that a juſt idea of Grace can belong only to ſome particular perſons, who are bleſſed with an original genius, and conſequently conſider every effort to attain it as vain and uſeleſs. Yet ſo far from coinciding with their opinion, I have no difficulty in aſſerting, that this natural talent, as they call it, may be acquired by ſtudying the works of ſuch artiſts as have been allowed to

excel in this particular branch of their profeſſion. We may, indeed, refer them to a higher ſource—

" For more than theſe to meditation's eyes
Great Nature's ſelf redundantly ſupplies;—
Her preſence, beſt of Models! is the ſource
Whence Genius draws augmented power and force;
Her precepts, beſt of Teachers! give the powers,
Whence Art by practice to perfection ſoars."

By this means the eye will be accuſtomed to diſcover that elegant ſimplicity of nature, which from want of obſervation is too apt to be conſidered as merely ideal; and when this is once ſeen, by diligence and attention, the hand may ſoon be taught readily to obey the dictates of the judgment. True it is, that theſe perſonal graces are frequently tranſient, and muſt therefore be caught by a quick and paſſing glance.

" —— Wandering oft' the crowded ſtreets along,
The native geſtures of the paſſing throng
Attentive mark: for many a caſual grace,
The expreſſive lines of each impaſſioned face,
That bears its joys or ſorrows undiſguiſ'd,
May by obſervant Taſte be there ſurpriz'd."

This undoubtedly requires a nice diſcrimination, an acute conception, a penetrating eye, and a retentive memory; but by an habitual exerciſe of theſe faculties, the acquirement of the Graces will be found leſs difficult than is generally imagined. It is earneſtly to be recommended to young ſtudents to ſelect carefully ſuch models for imitation, as are moſt perfect, otherwiſe they will be in danger of vitiating their taſte, and of rendering that part of their ſtudies, which ſhould form their judgment, abortive. Nothing will have a worſe influence on their mind, till they have acquired the power of diſcrimination, than the habit of viewing great beauties blended with groſs imperfections—their admiration of the former will reconcile them to

the latter, and too frequently, by an unlucky tranſpoſition, the one is ſubſtituted in the place of the other; and at all events, from being accuſtomed to contemplate beauty and deformity in the ſame object, the two ideas become ſo blended and interwoven, as to blunt, if not totally ſubdue, all diſcrimination, which at once is ſubverſive of ſound judgment.

I would not be underſtood to imply, that a knowledge of proportions is ſufficient to rely on in order to draw correctly: it certainly is not, as in general there are but few parts of a figure which are not more or leſs foreſhortened, and conſequently cannot be drawn or corrected by certain fixed meaſures; but after a time the eye by application will acquire great correctneſs, and the ſtudent will readily perform his taſk without any conſcious effort of the mind.

It will be no inconſiderable gratification to me, if the preſent publication, by throwing ſome light on two of the moſt eſſential parts of the ſcience, ſhould in any degree lead to the acquirement of that truth and certainty, which places difficulties at defiance; and by enforcing a knowledge of what ought to be clearly underſtood, become the means of rendering the art of drawing as delightful in practice as it is captivating in theory. The ſelection here given I have endeavoured to render as perfect as the nature of ſo ſmall a work would admit of; and I flatter myſelf that with the ſtudy and aſſiſtance of *Anatomical plaſter-caſts*, it will convey a ſufficient idea of the formation of the human figure to enable the ſtudent to draw with correctneſs and preciſion.

Note. The figures which are given to illuſtrate the Anatomical part of this work, are cleared of the ſkin, the fatty membrane, the nerves and veins, and arteries that appear on the ſurface of the body, in order to ſhew the muſcles more plainly.

EXPLANATION OF THE BONES.

A. THE Spine of the Ilium
B. Os Ilium
C. The great Trochanter
D. The Head of the Femur
E. The leſſer Trochanter
F. The Femur or Thigh Bone
G. Os Pubis
H. Os Iſchium
I. The Patella or Knee Pan
J. The inner Protuberance of the Femur
K. The outer Protuberance of the Femur
L. The Tibia
M. The Fibula
N. The lower Appendix of the Tibia or inner Ancle
O. The lower Appendix of the Fibula or outer Ancle
P. The Tarſus, or Inſtep, compoſed of ſix Bones beſides the Os Calcis
Q. Bones of the Metatarſus, or Foot
R. Bones of the Toes
S. Os Sacrum
T. Os Coccygis
V. The Os Calcis, or Bone of the Heel
U. The Linea Aſpera, or Spine of the Femur
W. The Humerus, or Bone of the Arm
X. The Radius } The Bones of the fore Arms
Y. The Ulna }
Z. The Scapula, or Shoulder Blade

a. The outer Protuberance of the Humerus
b. The inner Protuberance of the Humerus
c. The Acromium of the Scapula
d. A Sulcus, or Furrow in which paſſes one of the Heads of the Biceps
e. The Bones of the Carpus, or Wriſt
f. The Bones of the Thumb
g. The Bones of the Metacarpus, or Hand
h. The Bones of the Fingers
i. The Spine of the Scapula
k. The Baſe of the Scapula
l. Os Occipitis, or the back Part of the Head
m. Oſſa Bregmatis
n. Os Temporum
o. The Maſtoide Proceſs
p. The Lower Jaw
q. The ſeven Vertebræ of the Neck
r. The twelve Vertebræ of the Ribs
s. The five Vertebræ of the Loins
t. The Clavicula, or Collar Bone
v. The Sternum or Breaſt Bone
u. The Upper Jaw
w. Os Jugale
x. The Coracoide Proceſs of the Scapula
y. Os Frontis
1 2 3 4 5 6 7 The ſeven true Ribs
1 2 3 4 5 The five falſe Ribs

N. B. This Explanation of the Bones ſerves for all the four Plates of Anatomy, the Letters of Reference being the ſame in them all.

EXPLANATION OF PLATE I.

NAME.	ORIGIN AND INSERTION.	USE.
1. Triceps.	1. Hath its name from its having three heads: the firſt and ſecond of them ariſe from near the articulation of the os pubis, and the third from the tubercle of the iſchium: they are inſerted all along the ſpine of the femur.	1. Pulls the thigh inwards.
2. Sartorius.	2. Ariſes from the upper and fore part of the ſpine of the ilium, and deſcending obliquely over the thigh, is inſerted into the inner and upper part of the tibia.	2. Croſſes the legs in the manner Taylors are uſed to ſit; from whence it has its name.
3. Membranoſus.	3. Ariſeth from the upper and fore part of the ſpine of the ilium; its fleſhy part terminates at the great trochanter, where its membranous part begins, and ſpreading itſelf over the muſcles of the thigh, paſſes to its inſertion on the upper part of the tibia.	3. Draws the leg and thigh outwards.
4. Rectus Femoris.	4. Ariſeth from the lower part of the ſpine of the ilium, and is inſerted with the two following muſcles.	These muſcles extend the leg. When a figure ſtands upright and reſts on one leg, there appear above
5. Vaſtus externus.	5. Ariſeth from the great trochanter, and external part of the femur, and is inſerted with the former and following muſcles.	4. the knee certain ſwellings, which are made
6. Vaſtus internus.	6. Ariſeth from the leſſer trochanter and and internal part of the femur; this and the two laſt muſcles, juſt above the knee, make one ſtrong tendon which paſſes over the patella, to which it adheres, and is inſerted into the upper part of the tibia.	5. 6. by the tendon of theſe three muſcles and the ſkin. As ſoon as the knee bends they diſappear.
7. Tibialis anticus.	7. Ariſeth from the upper and outer part of the tibia, and is inſerted into the inner os cuneiforme and os metatarſi.	7. Bends the foot.
8. Peronæus.	8. Ariſes from the upper and outer part of the fibula; and paſſing under the channel of the outer ankle, is inſerted into the outer bone of the metatarſus.	8. Draws the foot outwards.

NAME.	ORIGIN AND INSERTION.	USE.
9. Extenſor digitorum pedis.	9. Ariſeth from the upper part of the tibia, and is inſerted into the bones of the toes.	9. Extends the toes.
10. Gaſterocnemius.	10. Has two diſtinct fleſhy originations, from the hindermoſt part of the two protuberances of the thigh bone, in their deſcent, they are dilated into two fleſhy bellies, the innermoſt of which is thickeſt and largeſt; and joining each other, make a broad ſtrong tendon, which joins with the tendon of the ſolæus, and is inſerted with it.	10. 11. They extend the foot. The action of theſe muſcles is very neceſſary in walking, running, leaping, and ſtanding on tip-toe; and thoſe who walk or run much, or who carry heavy burthens, have theſe muſcles larger than others.
11. Solæus.	11. Ariſes from the upper and back part of the tibia and fibula, and increaſes to a large fleſhy belly, which lies under the gaſterocnemius; and terminating in a very ſtrong tendon, (which by ſome is called the cord of Achilles) is inſerted into the hinder part of the os calcis.	
12. Glutæus medius.	12. Ariſeth from the external ſurface of the ilium and iſchium, and is inſerted into the great trochanter.	12. Helps to extend the thigh.
13. Glutæus major.	13. Ariſes from the external ſurface of the ilium and iſchium, from the os coccygis and os ſacrum, and is inſerted into the thigh bone, a hand's breadth below the geat trochanter.	13. Extends the thigh.
14. Biceps Femoris.	14. Has two heads, one of which ariſes from the tuberoſity of the iſchium, the other from the linea aſpera of the thigh bone; they both join together, and are inſerted by one tendon into the upper part of the fibula.	14. Helps to bend the leg, and and is likewiſe employed in turning the leg and foot outward when we ſit down.
15. Seminervoſus.	15. Ariſeth from the hinder protuberance of the iſchium, and is inſerted into the inner part of the tibia, below its articulation with the fibula.	15. Helps to bend the leg. 16. Helps to bend the leg. 17. Helps to bend the leg, and aſſiſts in bringing it and the thigh inwards.
16. Semimembranoſus. 17 Gracilis.	16. Ariſeth from the upper protuberance of the iſchium, and is inſerted into the upper and back part of the tibia.	N. B. Theſe four laſt muſcles which bend the leg, generally act together and make one maſs, as if they were but one muſcle; eſpecially about the middle of the thigh.
* The tibia or ſhin bone, which is not covered with fleſh.	17. Ariſeth from the os pubis, near its articulation; is and inſerted into the upper and inner part of the tibia.	

EXPLANATION OF PLATE II.

NAME.	ORIGIN AND INSERTION.	USE.
18. Latiſſimus dorſi.	18. Ariſes from the hinder part of the ſpine of the ilium, from the upper ſpine of the os ſacrum, from the ſpines of all the vertebræ of the loins, and from the ſeven lower ones of the back. It paſſes by the lower angle of the ſcapula, to which ſome of its fibres are fixed; and joining with the teres major, is inſerted with it into the humerus, three fingers breadth below its head.	18. Helps to draw the arms downwards, and obliquely backwards. This muſcle, at its origin, is ſo thin, that it does not hinder your ſeeing the action of the muſcles that are underneath it; but towards its inſertion becomes very thick and fleſhy.
3. Membranoſus, Pl. 1. 12. Glutæus medius, Pl. 1. 13. Glutæus major, Pl. 1.		
19. Trapezius, or cucullaris.	19. Ariſes from the hinder part of the head, from the ſpines of the vertebræ of the neck and the eight upper ones of the back; and is inſerted into the ſpine and acromium of the ſcapula and the clavicula.	19. Moves the ſcapula upwards, backwards, and downwards. This muſcle paſſing over the ſcapula, contributes very much to give a certain roundneſs which we ſee in that part.
20. Deltoides. 23. Gemellus, Pl. 3.	20. Ariſeth from part of the clavicula, and from the acromium and ſpine of the ſcapula; it is compoſed of ſeveral lobes or parcels of fleſh, which all join in one tendon, and are inſerted into the humerus, four fingers breadth below its head.	20. Raiſes the arm, and aſſiſts it in every motion except that of depreſſing it.
21. Infraſpinatus.	21. Ariſeth from the cavity below the ſpine of the ſcapula; and filling that cavity, is inſerted into the humerus, a little below its head.	21. Draws the arm downwards and backwards.
22. Teres-major. 35. Obliquus deſcendens, Pl. 4.	22. Ariſeth from the lower angle of the ſcapula, and is inſerted into the humerus, with the latiſſimus dorſi.	22. Helps to draw the arm downwards and backwards.
40. Splenius.	40. Ariſeth from the three lower vertebræ of the neck, and five upper ones of the back, and is inſerted above the maſtoide proceſs.	40. Draws the head backwards and ſidewards.

NAME.	ORIGIN AND INSERTION.	USE.
45. Longiſſimus dorſi.	45. Ariſeth from the upper part of the os ſacrum and back part of the ſpine of the ilium, and is inſerted partly into the proceſſes of the vertebræ of the back, and partly into the ribs.	45. 46. Theſe muſcles keep the body erect, bend it backwards and ſuſtain it when it is bent forwards; and when they act only on one ſide, they draw the body ſideways.
46. Sacrolumbaris.	46. Ariſeth from the ſame origin as the laſt muſcle, and is inſerted into the back part of the ribs, near their root.	

Although theſe three laſt muſcles are entirely covered by the trapezius of the latiſſimus dorſi, their action and ſhape appear very plainly.

EXPLANATION OF PLATE III.

NAME.	ORIGIN AND INSERTION.	USE.
23. Gemellus.	23. This may likewiſe be called triceps brachialis; it being compoſed of the brachiæus externus, which ariſes about the middle and hinder part of the humerus; the muſculus longus, which ariſes from the lower ſide of the ſcapula, and the muſculus brevis, which ariſes from the hinder part of the humerus. Theſe three join together and make one tendon, which covers the elbow, and is inſerted into the hinder part of the olecranium.	23. Extends the arm.
20. Deltoides, Pl. 2.		
24. Anconæus.	24. Ariſeth from the back part of the outer protuberance of the humerus, and is inſerted into the ulna, four fingers breadth below the olecranium.	24. Helps to extend the arm.
25. Brachiæus internus.	25. Ariſeth from the middle and internal part of the humerus, and is inſerted into the upper and fore part of the ulna. This muſcle is partly covered by the biceps.	25. Bends the fore arm.
26. Extenſor carpi radialis.	26. Ariſeth from the outer protuberance of the humerus, and is inſerted into the bones of the metacarpus, that ſuſtain the fore and middle fingers.	26. Extends the wriſt.
27. Flexor carpi ulnaris.	27. Ariſeth from the inner protuberance of the humerus, and is inſerted into the inner little bone of the wriſt.	27. Bends the wriſt and little finger.
28. Extenſor carpi ulnaris.	28. Ariſeth from the outer protuberance of the humerus, and is inſerted into the bone of the metacarpus, which ſuſtains the little finger.	28. Extends the wriſt.
29. Extenſor digitorum.	29. Ariſeth from the outer protuberance of the humerus, and from the hinder part of the radius and ulna: at the wriſt it divides into three tendons, which are inſerted into the bones of the three firſt fingers.	29. Extends the fingers.
30. Extenſor minimi digiti.	30. Ariſeth from the outer protuberance of the humerus and from the upper part of the ulna, and is inſerted into the third bone of the little finger.	30. Extends the little finger.

NAME.	ORIGIN AND INSERTION.	USE.
31. Extenſor pollicis.	31. Ariſeth from the hinder part of the middle of the radius and ulna; and paſſing obliquely over the tendon of the extenſor carpi radialis, is inſerted by two or three tendons into the bones of the thumb.	31. Extends the thumb.
33. Biceps.	33. Hath two heads; one of which ariſes from the upper edge of the head of the ſcapula, and the other from the proceſſus coracoides of the ſcapula; they both unite about the middle of the arm, and make one belly, which is inſerted by a ſtrong round tendon into the tuberoſity at the upper end of the radius.	33. Bends the fore arm.
39. Supinator radii longus.	39. Ariſeth a little above the outer protuberance of the humerus, and is inſerted into the lower part of the radius.	39. Turns the palm of the hand upwards.
41. Pronator rotundus.	41. Ariſeth from the inner protuberance of the humerus, and deſcends obliquely to its inſertion a little above the middle of the radius.	41. Turns the palm of the hand downwards.
42. Flexor carpi radialis.	42. Ariſeth from the inner protuberance of the humerus, and upper part of the ulna; and is inſerted into the firſt bone of the metacarpus, that ſuſtains the fore finger.	42. Bends the wriſt.
43. Palmaris.	43. Ariſeth from the inner protuberance of the humerus; and paſſing by a ſlender tendon to the palm of the hand, expands itſelf, and is inſerted into the bones of the metacarpus and into the firſt bones of the fingers.	43. Helps the hand to graſp any thing cloſely.
44. The maſs of fleſh that appears under the flexor carpi radialis, and the palmaris, is compoſed of the perforatus and perforans.	44. The perforatus ariſeth from the inner protuberance of the humerus, and from the radius, and is divided into four tendons, which are inſerted into the ſecond bones of the four fingers. Juſt above their inſertion, they are perforated or ſplit, to give a paſſage to the tendons of the perforans, which ariſes from the upper part of the ulna, and is likewiſe divided into four tendons, which paſs through the perforations juſt mentioned, and are inſerted into the third bones of the four fingers.	44. Theſe muſcles bend the fingers.

EXPLANATION OF PLATE IV.

NAME.	ORIGIN AND INSERTION.	USE.
32. Pectoralis.	32. Ariſeth from part of the clavicula, from the ſternum, and from the ſix upper ribs, and is inſerted by a ſtrong tendon into the humerus, four fingers breadth below its head.	32. Draws the arm forwards.
18. Latiſſimus dorſi, Pl. 2.		
34. Serratus major anticus.	34. Ariſeth from the ſix lower true ribs, and from the firſt and ſometimes ſecond of the falſe ribs, by ſo many diſtinct portions, reſembling the teeth of a ſaw, and is inſerted into the baſe of the ſcapula. You ſee but part of this muſcle, the reſt being covered by the pectoralis.	34. Draws the ſcapula forwards and downwards; it likewiſe aſſiſts in reſpiration in extraordinary difficulties. In this caſe the ſcapula is drawn upwards and backwards by the trapezius; and being ſo fixed, this muſcle then acting, raiſes the ribs.
19. Trapezius, or cucullaris, Pl. 2.		
20. Deltoides, Pl. 2.		35. Aſſiſts in expiration, and occaſionally in diſcharging the ſtomach and belly of its contents.
35. Obliquus deſcendens.	35. Ariſeth from the two laſt true, and five falſe ribs, by five or ſix digitations; the four uppermoſt of which lie between the teeth of the ſerratus major anticus: it deſcends obliquely by a broad and very thin tendon; and paſſing under the rectus, is inſerted all along the linea alba, to the upper and fore part of the ſpine of the ilium, and to the fore part of the os pubis.	36. Raiſes the body when we lie on the back, and ſuſtains it when it is bent backwards. It hath three or four nervous or tendinous interſections or bands which divide it, and make it appear like ſeveral muſcles. The third of theſe bands is not in every body exactly in the ſame place, it being ſometimes even with the navel, and ſometimes higher. Sometimes there is one of theſe bands below the navel, but it is not ſo in all bodies.
36. Rectus.	36. Ariſeth from the ſternum, and the two laſt true ribs: and is inſerted into the os pubis.	
37. Maſtoidæus.	37. Ariſeth from the ſternum and part of the clavicula; and is inſerted into the outer part of the maſtoide proceſs.	37. Draws the head downwards and ſideways.
38. Sternohyoidæus.	38. Ariſes from the ſternum and the clavicula: and is inſerted into the baſe of the os hyoides.	38. Draws the os hyoides downwards. The action of this muſcle is hardly perceivable.

MUSCLES OF THE FACE.

NAME.	ORIGIN AND INSERTION.	USE.
a. Occipito frontalis.	a. Ariſes from behind each ear, from the os occipitis, and becoming tendinous is inſerted into the orbicular muſcle of the os frontis.	a. Pulls the ſkin of the forehead upwards.
b. Elevator auris.	b. Ariſes from the tendon of the occipitis, and is inſerted into the upper part of the ear, which is connected with the head.	b. The action of this muſcle is not perceivable.
c. Orbicularis palpebrarum.	c. Surrounds the eye-lids on the edge of the orbit, and is fixed to the tranſverſe ſuture which croſſes the noſe from the corner of the eye.	c. Shuts the eye-lids.
d. Maſſeter.	d. Ariſes from the higher part of the upper jaw, and is inſerted into the outer part of the under jaw.	d. Pulls the jaw upwards and forwards.
e. Zygomaticus.	e. Ariſes from the lower part of the orbicular muſcle, and is inſerted into the corner of the mouth.	e. Draws the corner of the mouth upwards.
f. Elevator labiorum.	f. Ariſes from the upper jaw, and is inſerted into the corner of the mouth.	f. Helps to raiſe the corner of the mouth.
g. Elevator labii.	g. Ariſes from the upper jaw, and is inſerted into the ſphincter oris.	g. Raiſes the upper lip.
h. Depreſſor labiorum.	h. Ariſes from the lower jaw, near the chin, and is inſerted into the ſphincter muſcle with the former.	h. i. k. } Theſe muſcles act as depreſſers of the chin and angles of the mouth.
i. Sphincter oris.	i. Surrounds the mouth, and is very much loſt by the inſertion of other muſcles.	
k. Depreſſoris labii inferioris.	k. Ariſes from the under jaw, and is inſerted into its lower edge.	

The Meaſures of the Human Body, as ſelected from the moſt perfect of the antient Statues.

" THE antients have commonly allowed eight heads to their figures, though ſome of them have but ſeven; but we ordinarily divide the figure into ten faces;* that is to ſay, from the crown of the head to the ſole of the foot, in the following manner:

" From the crown of the head to the forehead is the third part of a face.

" The face begins at the root of the loweſt hairs which are upon the forehead, and ends at the bottom of the chin.

" The face is divided into three proportionable parts; the firſt contains the forehead, the ſecond the noſe, and the third the mouth and the chin; from the chin to the top of the ſternum are two lengths of a noſe.

" From the top of the ſternum to the bottom of the breaſt, one face.

" † From the bottom of the breaſt to the navel, one face.

" From the navel to the genitories, one face.

" From the genitories to the upper part of the knee, two faces.

" The knee contains half a face.

" From the lower part of the knee to the ankle, two faces.

" From the ankle to the ſole of the foot, half a face.

" A man, when his arms are ſtretched out, is from the longeſt finger of his right hand to the longeſt of his left, as broad as he is long.

" From one ſide of the breaſts to the other, two faces.

" The bone of the arm, called the humerus, is the length of two faces from the ſhoulder to the elbow.

" From the end of the elbow to the root of the little finger, the bone called cubitus, with part of the head, contains two faces.

" From the box of the ſhoulder-blade to the ſternum, one face.

* This depends on the age and quality of the perſon. The Belvidere Apollo, and the Venus de Medicis, have more than ten faces.

† The Apollo has a noſe more.

" If you would be ſatisfied in the meaſures of breadth, from the extremity of one finger to the other, ſo that this breadth ſhould be equal to the length of the body, you muſt obſerve, that the boxes of the elbows with the humerus, and of the humerus with the ſhoulder-blade, bear the proportion of half a face when the arms are ſtretched out.

" The ſole of the foot is the ſixth part of the figure.

" The hand is the length of a face.

" The thumb is a third part of the face.

" The inſide of the arm, from the place where the muſcle diſappears which makes the breaſt, (called the pectoral muſcle) to the middle of the arm, contains the length of a head.

" From the middle of the arm to the beginning of the head, five noſes.

" The longeſt toe is one third part of the face in length.

" The centre of the breaſts, and the pit betwixt the collar-bones of a woman, make an equilateral triangle.

" For the breadth of the limbs no preciſe meaſures can be given, becauſe the meaſures themſelves are changeable, according to the quality of the perſon, and according to the movement of the muſcles." DU PILES.

The proportions of the features and the head will be found ſufficiently explained in the firſt plate of proportions as follows:—The full eye is divided into three equal parts, the iris forming the centre, the other two parts are equal. The profile eye is divided into one part and an half, as in the plate. The full noſe into three parts. The profile noſe into two. The full mouth into four equal parts, and the profile into two parts, the firſt of which being ſubdivided into three parts, gives the projection of the upper lip beyond the under one. The ear is divided into three equal parts, as deſcribed in the plate. The head will be found proportioned as before deſcribed; it will be only neceſſary to obſerve further, that in the full face there is the ſpace of an eye contained between the two; and in the profile the place of the ear is given between the eye and the noſe, by forming an equilateral triangle from the point of the forehead to the chin.

The meaſures of the antient ſtatues, by Audran, appear to be the moſt uſeful, as they are accompanied with the outline of thoſe figures, which are moſt diſtinguiſhed for correctneſs.

TYPIS S. GOSNELL.

ERRATA.

Page 1, Line 6.—after *the ſcience*, add *of Painting*.

Pl. I.


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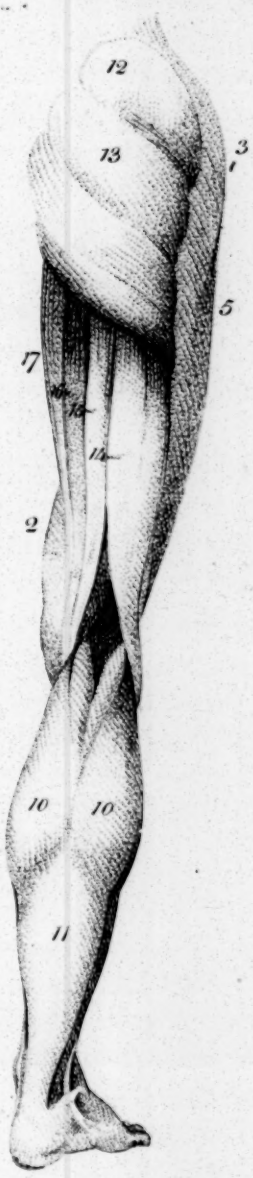
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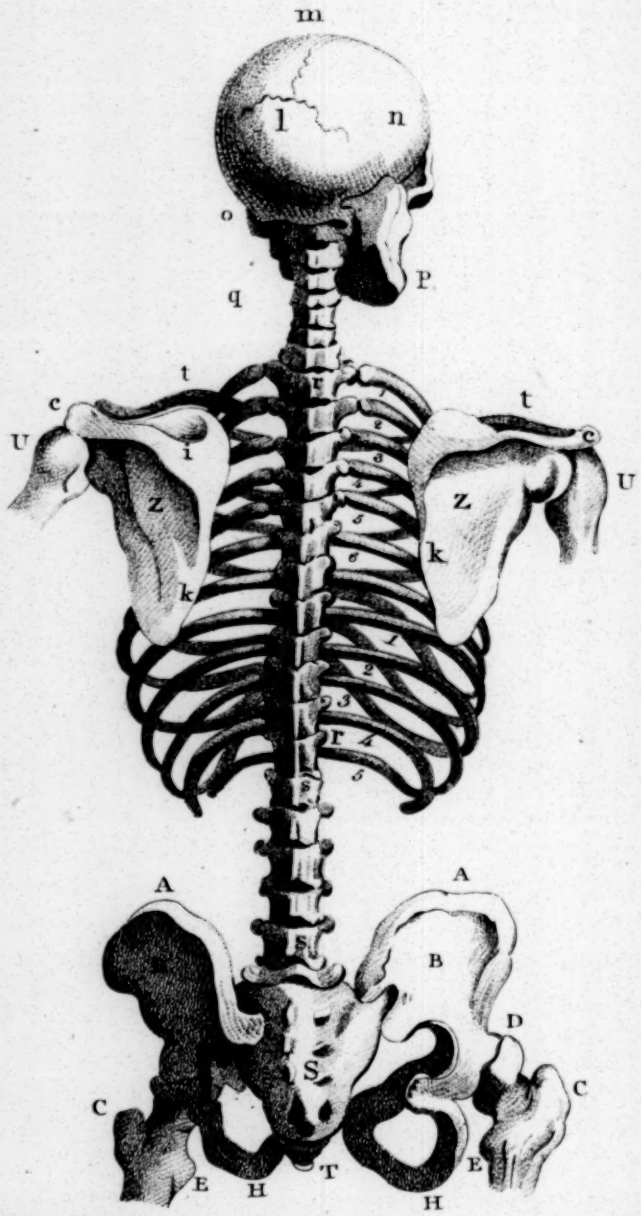
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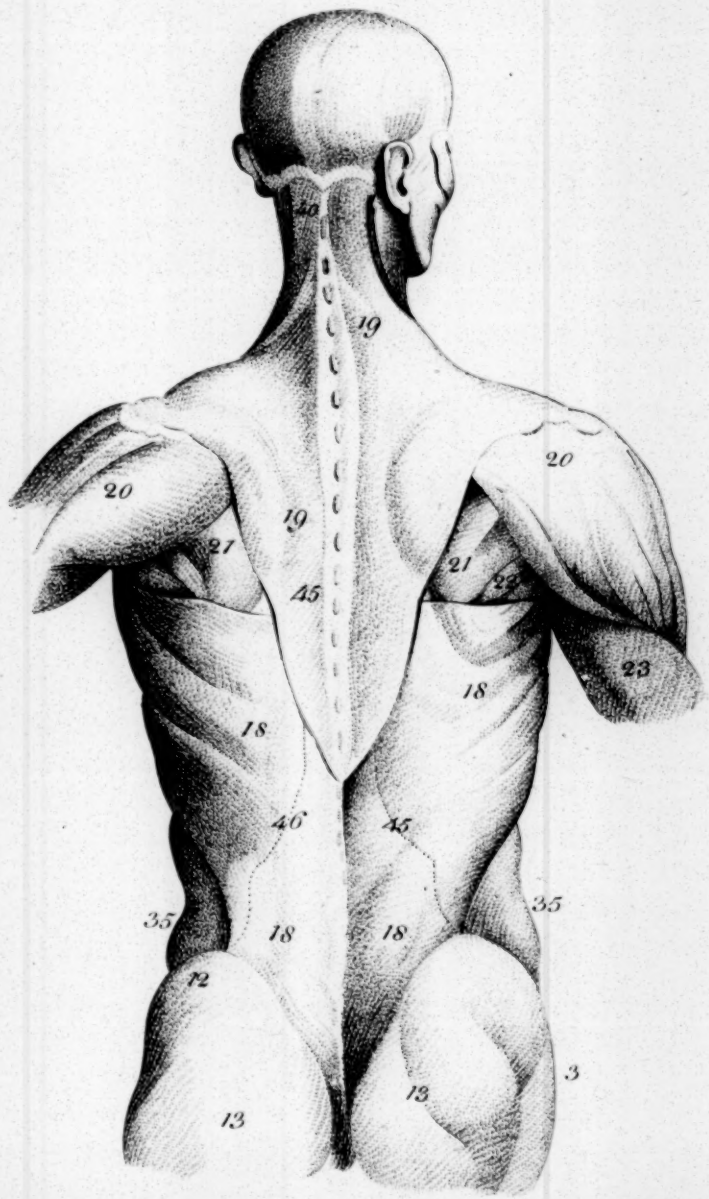
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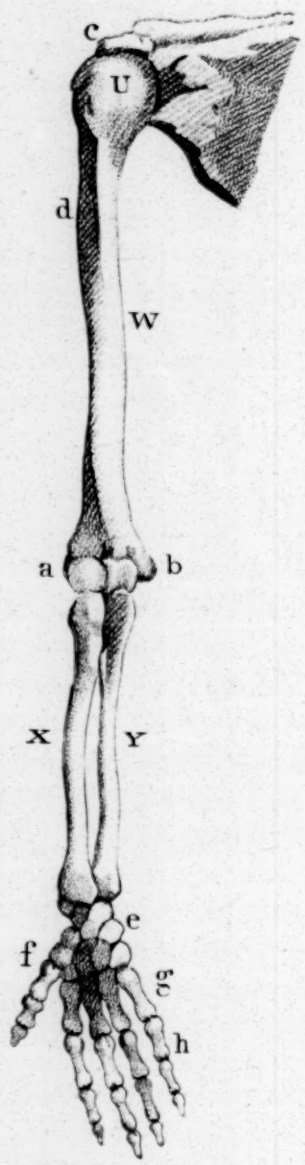
Pl. 3.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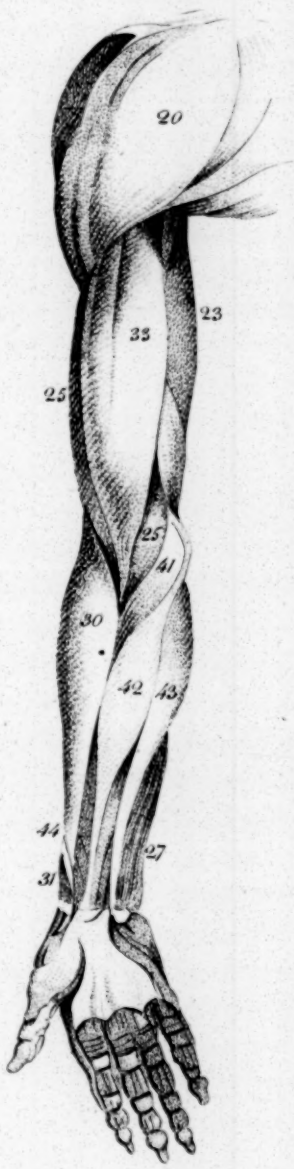
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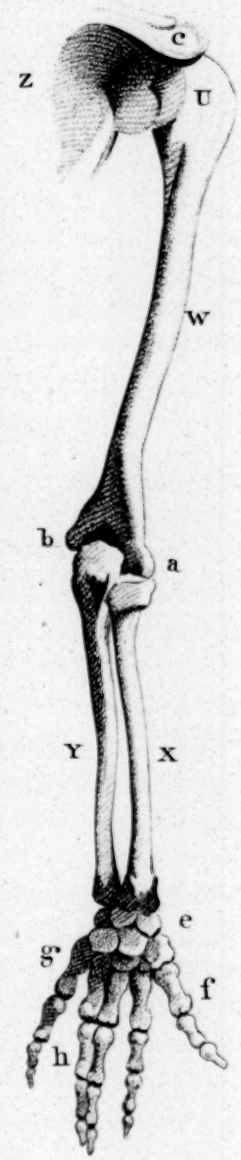
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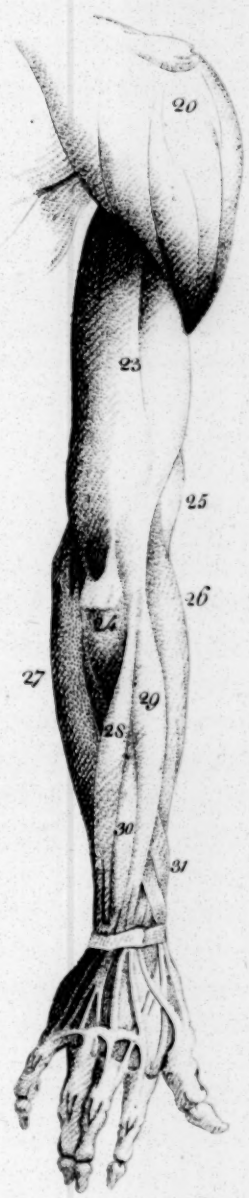
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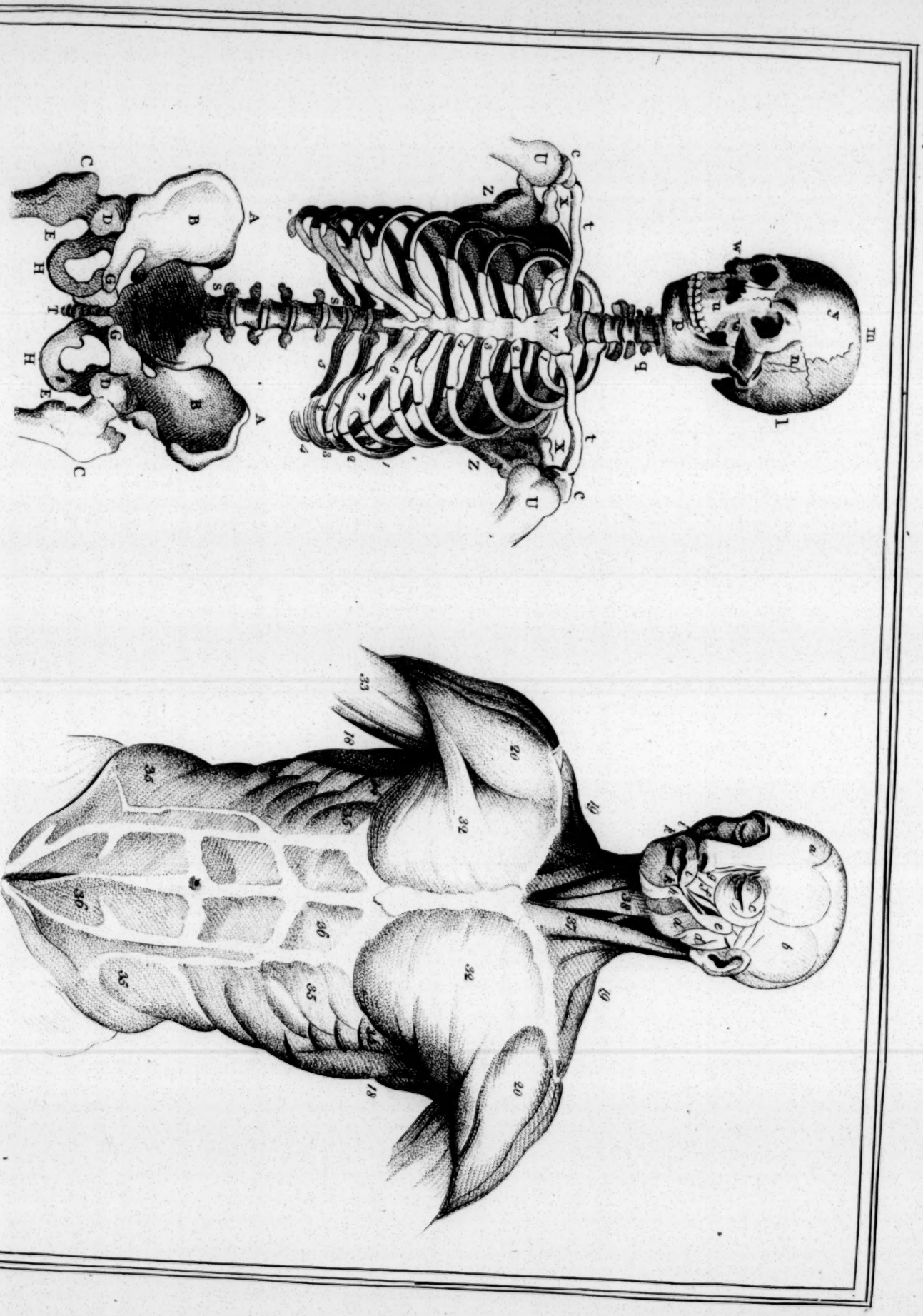
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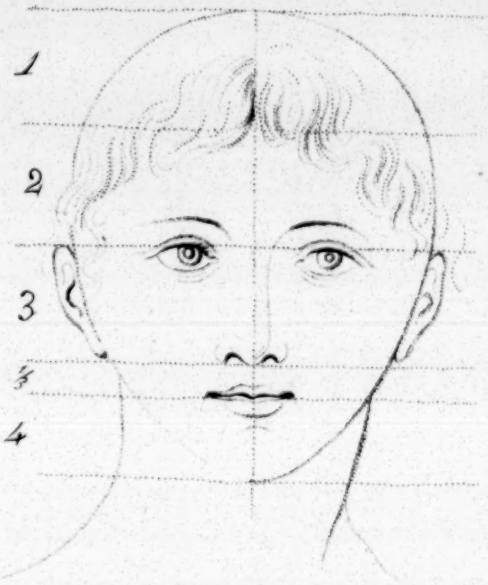
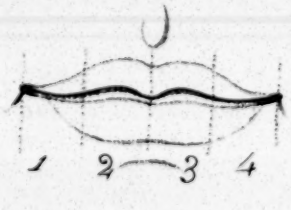
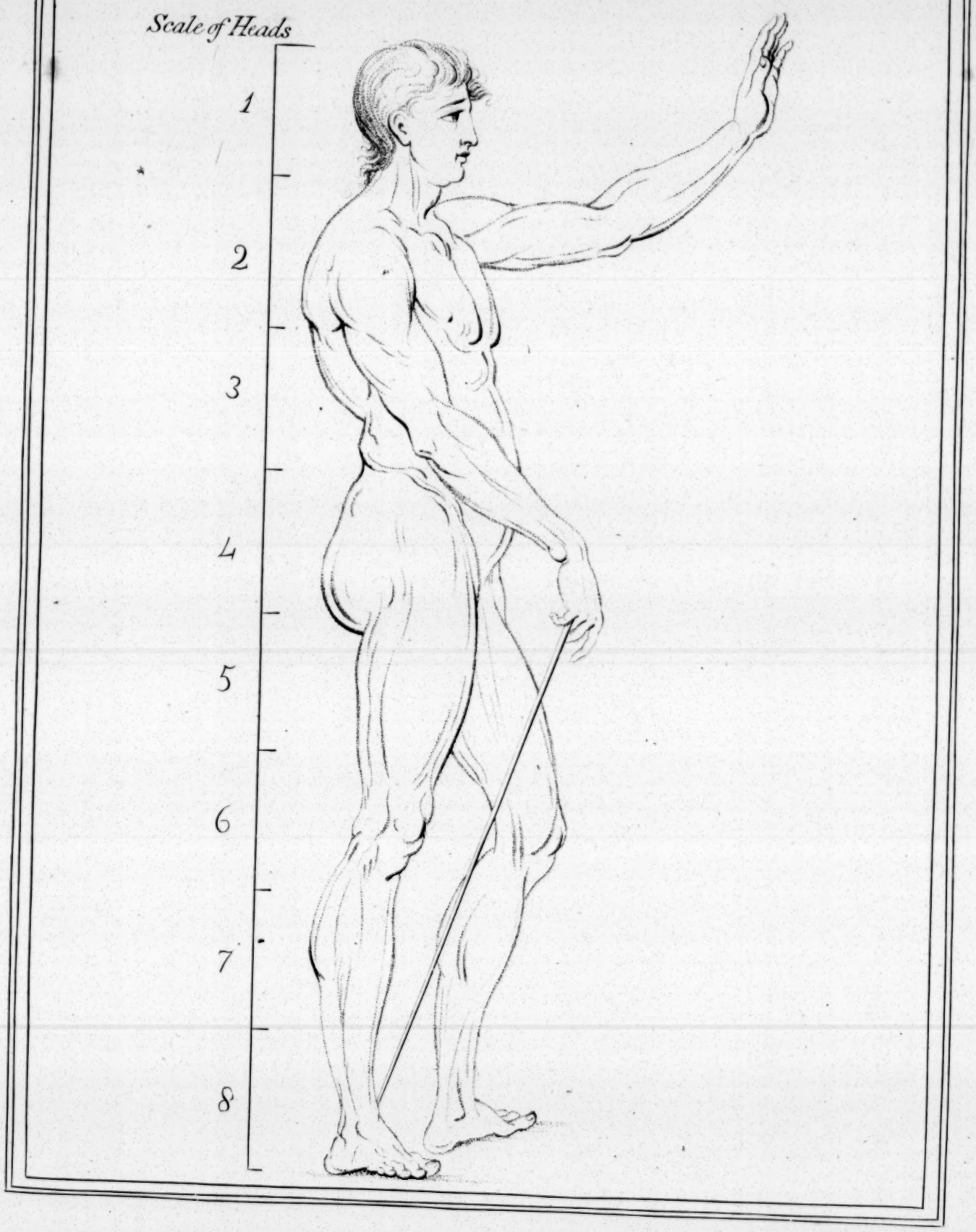
1st. Plate of Proportions.



Lines of Beauty



2ⁿᵒ Plate of Proportions.




G.R. III.